PAGE: 1   RAW SEQUENCE LISTING   DATE: 04/27/2000
                   PATENT APPLICATION **US/08/737,904F**   TIME: 17:09:16

Input Set: **H737904F.RAW**

> **This Raw Listing contains the General Information
> Section and up to first 5 pages.**

ENTERED

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 1   <110> APPLICANT: Griffith, Irwin J et al.
 2   <120> TITLE OF INVENTION: T CELL EPITOPES OF RYEGRASS POLLEN ALLERGEN
 3   <130> FILE REFERENCE: IMI-040CP3
 4   <140> CURRENT APPLICATION NUMBER: US/08/737,904F
 5   <141> CURRENT FILING DATE: 1996-11-20
 6   <150> EARLIER APPLICATION NUMBER: 08/106,016
 7   <151> EARLIER FILING DATE: 1993-08-13
 8   <160> NUMBER OF SEQ ID NOS: 60
 9   <170> SOFTWARE: PatentIn Ver. 2.0
10   <210> SEQ ID NO 1
11   <211> LENGTH: 1229
12   <212> TYPE: DNA
13   <213> ORGANISM: Escherichia coli
14   <220> FEATURE:
15   <221> NAME/KEY: CDS
16   <222> LOCATION: (40)..(942)
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19                                                        Met Ala Val Gln Lys
20                                                         1                5
21         tac acg gtg gct cta ttc ctc gcc gtg gcc ctc gtg gcg ggc ccg gcc     102
22         Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu Val Ala Gly Pro Ala
23                       10                15                 20
24         gcc tcc tac gcc gct gac gcc ggc tac acc ccc gca gcc gcg gcc acc     150
25         Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Thr Pro Ala Ala Ala Ala Thr
26                    25                30                    35
27         ccg gct act cct gct gcc acc ccg gct gcg gct gga ggg aag gcg acg     198
28         Pro Ala Thr Pro Ala Ala Thr Pro Ala Ala Ala Gly Gly Lys Ala Thr
29                    40                45                 50
30         acc gac gag cag aag ctg ctg gag gac gtc aac gct ggc ttc aag gca     246
31         Thr Asp Glu Gln Lys Leu Leu Glu Asp Val Asn Ala Gly Phe Lys Ala
32                 55                60                    65
33         gcc gtg gcc gcc gct gcc aac gcc cct ccg gcg gac aag ttc aag atc     294
34         Ala Val Ala Ala Ala Ala Asn Ala Pro Pro Ala Asp Lys Phe Lys Ile
35             70                75                 80                    85
36         ttc gag gcc gcc ttc tcc gag tcc tcc aag ggc ctc ctc gcc acc tcc     342
37         Phe Glu Ala Ala Phe Ser Glu Ser Ser Lys Gly Leu Leu Ala Thr Ser
38                    90                95                    100
39         gcc gcc aag gca ccc ggc ctc atc ccc aag ctc gac acc gcc tac gac     390
40         Ala Ala Lys Ala Pro Gly Leu Ile Pro Lys Leu Asp Thr Ala Tyr Asp
41                    105                110                115
42         gtc gcc tac aag gcc gcc gag ggc gcc acc ccc gag gcc aag tac gac     438
43         Val Ala Tyr Lys Ala Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp
44                    120                125                130
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45            gcc ttc gtc act gcc ctc acc gaa gcg ctc cgc gtc atc gcc ggc gcc   486
46            Ala Phe Val Thr Ala Leu Thr Glu Ala Leu Arg Val Ile Ala Gly Ala
47                135                 140                 145
48            ctc gag gtc cac gcc gtc aag ccc gcc acc gag gag gtc cct gct gct   534
49            Leu Glu Val His Ala Val Lys Pro Ala Thr Glu Glu Val Pro Ala Ala
50            150                 155                 160                 165
51            aag atc ccc acc ggt gag ctg cag atc gtt gac aag atc gat gct gcc   582
52            Lys Ile Pro Thr Gly Glu Leu Gln Ile Val Asp Lys Ile Asp Ala Ala
53                                170                 175                 180
54            ttc aag atc gca gcc acc gcc gcc aac gcc gcc ccc acc aac gat aag   630
55            Phe Lys Ile Ala Ala Thr Ala Ala Asn Ala Ala Pro Thr Asn Asp Lys
56                                185                 190                 195
57            ttc acc gtc ttc gag agt gcc ttc aac aag gcc ctc aat gag tgc acg   678
58            Phe Thr Val Phe Glu Ser Ala Phe Asn Lys Ala Leu Asn Glu Cys Thr
59                200                 205                 210
60            ggc ggc gcc tat gag acc tac aag ttc atc ccc tcc ctc gag gcc gcg   726
61            Gly Gly Ala Tyr Glu Thr Tyr Lys Phe Ile Pro Ser Leu Glu Ala Ala
62                215                 220                 225
63            gtc aag cag gcc tac gcc gcc acc gtc gcc gcc gcg ccc gag gtc aag   774
64            Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala Pro Glu Val Lys
65            230                 235                 240                 245
66            tac gcc gtc ttt gag gcc gcg ctg acc aag gcc atc acc gcc atg acc   822
67            Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile Thr Ala Met Thr
68                                250                 255                 260
69            cag gca cag aag gcc ggc aaa ccc gct gcc gcc gct gcc aca ggc gcc   870
70            Gln Ala Gln Lys Ala Gly Lys Pro Ala Ala Ala Ala Ala Thr Gly Ala
71                            265                 270                 275
72            gca acc gtt gcc acc ggc gcc gca acc gcc gcc gcc ggt gct gcc acc   918
73            Ala Thr Val Ala Thr Gly Ala Ala Thr Ala Ala Ala Gly Ala Ala Thr
74                            280                 285                 290
75            gcc gct gct ggt ggc tac aaa gcc tgatcagctt gctaatatac tactgaacgt   972
76            Ala Ala Ala Gly Gly Tyr Lys Ala
77                            295                 300
78            atgtatgtgc atgatccggg cggcgagtgg ttttgttgat aattaatctt cgttttcgtt 1032
79            tcatgcagcc gcgatcgaga gggcttgcat gcttgtaata attcaatatt tttcatttct 1092
80            ttttgaatct gtaaatcccc atgacaagta gtgggatcaa gtcggcatgt atcaccgttg 1152
81            atgcgagttt aacgatgggg agtttatcaa agaatttatt attaaaaaaa aaaaaaaaaa 1212
82            aaaaaaaaaa aaaaaaa                                                1229
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84    <211> LENGTH: 301
85    <212> TYPE: PRT
86    <213> ORGANISM: Escherichia coli
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91                            20                  25                  30
92            Ala Ala Ala Ala Thr Pro Ala Thr Pro Ala Ala Thr Pro Ala Ala Ala
93                            35                  40                  45
94            Gly Gly Lys Ala Thr Thr Asp Glu Gln Lys Leu Leu Glu Asp Val Asn
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 95              50                 55                 60
 96         Ala Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Asn Ala Pro Pro Ala
 97              65                 70                 75                 80
 98         Asp Lys Phe Lys Ile Phe Glu Ala Ala Phe Ser Glu Ser Ser Lys Gly
 99                                 85                 90                 95
100         Leu Leu Ala Thr Ser Ala Ala Lys Ala Pro Gly Leu Ile Pro Lys Leu
101                                100                105                110
102         Asp Thr Ala Tyr Asp Val Ala Tyr Lys Ala Ala Glu Gly Ala Thr Pro
103                                115                120                125
104         Glu Ala Lys Tyr Asp Ala Phe Val Thr Ala Leu Thr Glu Ala Leu Arg
105                                130                135                140
106         Val Ile Ala Gly Ala Leu Glu Val His Ala Val Lys Pro Ala Thr Glu
107              145                150                155                160
108         Glu Val Pro Ala Ala Lys Ile Pro Thr Gly Glu Leu Gln Ile Val Asp
109                                165                170                175
110         Lys Ile Asp Ala Ala Phe Lys Ile Ala Ala Thr Ala Ala Asn Ala Ala
111                                180                185                190
112         Pro Thr Asn Asp Lys Phe Thr Val Phe Glu Ser Ala Phe Asn Lys Ala
113                                195                200                205
114         Leu Asn Glu Cys Thr Gly Gly Ala Tyr Glu Thr Tyr Lys Phe Ile Pro
115              210                215                220
116         Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala
117              225                230                235                240
118         Ala Pro Glu Val Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala
119                                245                250                255
120         Ile Thr Ala Met Thr Gln Ala Gln Lys Ala Gly Lys Pro Ala Ala Ala
121                                260                265                270
122         Ala Ala Thr Gly Ala Ala Thr Val Ala Thr Gly Ala Ala Thr Ala Ala
123                                275                280                285
124         Ala Gly Ala Ala Thr Ala Ala Ala Gly Gly Tyr Lys Ala
125              290                295                300
126  <210> SEQ ID NO 3
127  <211> LENGTH: 20
128  <212> TYPE: PRT
129  <213> ORGANISM: Escherichia coli
130  <220> FEATURE:
131  <223> OTHER INFORMATION: all occurrences of Xaa=hydroxyproline
132  <400> SEQUENCE: 3
133         Ala Asp Ala Gly Tyr Thr Xaa Ala Ala Ala Ala Thr Xaa Ala Thr Xaa
134              1               5                 10                 15
135         Ala Ala Thr Xaa
136                             20
137  <210> SEQ ID NO 4
138  <211> LENGTH: 20
139  <212> TYPE: PRT
140  <213> ORGANISM: Escherichia coli
141  <220> FEATURE:
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143  <400> SEQUENCE: 4
144         Ala Thr Xaa Ala Thr Pro Ala Ala Thr Xaa Ala Ala Ala Gly Gly Lys
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145              1          5              10              15
146         Ala Thr Thr Asp
147                        20
148    <210> SEQ ID NO 5
149    <211> LENGTH: 20
150    <212> TYPE: PRT
151    <213> ORGANISM: Escherichia coli
152    <220> FEATURE:
153    <223> OTHER INFORMATION: all occurrences of Xaa =hydroxyproline
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155         Ala Ala Ala Gly Gly Lys Ala Thr Thr Asp Glu Gln Lys Leu Leu Glu
156              1          5              10              15
157         Asp Val Asn Ala
158                        20
159    <210> SEQ ID NO 6
160    <211> LENGTH: 20
161    <212> TYPE: PRT
162    <213> ORGANISM: Escherichia coli
163    <400> SEQUENCE: 6
164         Glu Gln Lys Leu Leu Glu Asp Val Asn Ala Gly Phe Lys Ala Ala Val
165              1          5              10              15
166         Ala Ala Ala Ala
167                        20
168    <210> SEQ ID NO 7
169    <211> LENGTH: 16
170    <212> TYPE: PRT
171    <213> ORGANISM: Escherichia coli
172    <400> SEQUENCE: 7
173         Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Asn Ala Pro Pro Ala Asp
174              1          5              10              15
175    <210> SEQ ID NO 8
176    <211> LENGTH: 20
177    <212> TYPE: PRT
178    <213> ORGANISM: Escherichia coli
179    <400> SEQUENCE: 8
180         Asn Ala Pro Pro Ala Asp Lys Phe Lys Ile Phe Glu Ala Ala Phe Ser
181              1          5              10              15
182         Glu Ser Ser Lys
183                        20
184    <210> SEQ ID NO 9
185    <211> LENGTH: 20
186    <212> TYPE: PRT
187    <213> ORGANISM: Escherichia coli
188    <400> SEQUENCE: 9
189         Phe Glu Ala Ala Phe Ser Glu Ser Ser Lys Gly Leu Leu Ala Thr Ser
190              1          5              10              15
191         Ala Ala Lys Ala
192                        20
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194    <211> LENGTH: 20
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196      <213> ORGANISM: Escherichia coli
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200           Leu Asp Thr Ala
201                         20
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203      <211> LENGTH: 20
204      <212> TYPE: PRT
205      <213> ORGANISM: Escherichia coli
206      <400> SEQUENCE: 11
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208             1               5                   10                  15
209           Ala Ala Glu Gly
210                         20
211      <210> SEQ ID NO 12
212      <211> LENGTH: 20
213      <212> TYPE: PRT
214      <213> ORGANISM: Escherichia coli
215      <400> SEQUENCE: 12
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217             1               5                   10                  15
218           Tyr Asp Ala Phe
219                         20
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221      <211> LENGTH: 20
222      <212> TYPE: PRT
223      <213> ORGANISM: Escherichia coli
224      <400> SEQUENCE: 13
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228                         20
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230      <211> LENGTH: 20
231      <212> TYPE: PRT
232      <213> ORGANISM: Escherichia coli
233      <400> SEQUENCE: 14
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235             1               5                   10                  15
236           Val His Ala Val
237                         20
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239      <211> LENGTH: 20
240      <212> TYPE: PRT
241      <213> ORGANISM: Escherichia coli
242      <400> SEQUENCE: 15
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VERIFICATION SUMMARY
PATENT APPLICATION **US/08/737,904F**

Input Set: **H737904F.RAW**

Line	?	Error/Warning	Original Text
133	W	"N" or "Xaa" used: Feature required	Ala Asp Ala Gly Tyr Thr Xaa Ala Ala Ala A
135	W	"N" or "Xaa" used: Feature required	Ala Ala Thr Xaa
144	W	"N" or "Xaa" used: Feature required	Ala Thr Xaa Ala Thr Pro Ala Ala Thr Xaa A
385	W	"N" or "Xaa" used: Feature required	Ile Ala Lys Val Xaa Pro Gly Xaa Asn Ile T
594	W	"N" or "Xaa" used: Feature required	Ala Asp Ala Gly Tyr Thr Xaa Ala Ala Ala A
596	W	"N" or "Xaa" used: Feature required	Ala Ala Thr Xaa Ala Ala Ala Gly Gly Lys A
630	W	Invalid/Missing Amino Acid Numbering	
742	W	"N" or "Xaa" used: Feature required	Ala Asp Ala Gly Tyr Thr Xaa Ala Ala Ala A
744	W	"N" or "Xaa" used: Feature required	Ala Ala Thr Xaa
753	W	"N" or "Xaa" used: Feature required	Ala Thr Xaa Ala Thr Xaa Ala Ala Thr Xaa A